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Governor

Hawaii Flood Management News

Department of Land and Natural Resources
Engineering Division

October 2005

Hawaii Flood Management News is published quarterly. It is supported by the Federal Emergency Management Agency under the Community Assistance Program. The contents are dedicated to the public. The authors and publisher are solely responsible for the accuracy, and do not necessarily reflect the views of the federal government.

We welcome newsworthy items from the general public. Articles may be sent to the Department of Land and Natural Resources, Engineering Division, P.O. Box 373, Honolulu, Hawaii 96809. Call (808) 587-0267 for more information.

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Déjà Vu Hawaii's Own Levee Failure

For some Hawaii residents, watching the New Orleans levee failures brought back some frightening memories from over a decade ago. Although the Kawainui Marsh levee, in Windward Oahu, did not breach during the "New Year's Eve Flood", it did "fail" many Kailua residents that very wet and rainy night.

December 31, 1987:

Oahu experiences persistent rainfall.

Forecasters call for continued thundershower activity with heavy downpours.

No flood warnings were announced during the daytime hours. A post disaster report by the National Research Council (*"The New Year's Eve Flood on Oahu, Hawaii December 31, 1987 - January 1, 1988, Volume 1"*) stated that *"Forecasting of the torrential rains was made difficult by the unavailability of adequate weather radar in the region. In addition, high clouds masked the actual rain clouds, limiting the effectiveness of satellite imagery in depicting local weather"*.

But at approximately 8:30 pm that evening, the National Weather Service (NWS) issues a flood warning for Eastern Oahu. Immediate attention of emergency response personnel was focused on the Hawaii Kai and Waimanalo area due to earlier reports of flooding and mud slides. However, no one could have imagined what was still to come in the early morning hours for many Kailua residents. Without warning, and in an eerie, but similar fashion to the events after Hurricane Katrina skirted past New Orleans, Coconut Grove residents awoke to floodwaters (up to 4 feet deep in some areas) that inundated the densely populated subdivision.

Sometime around midnight, on the eve of the new year, floodwaters began to overtop the Kawainui Marsh Flood Control Levee at the Southern end of the marsh. The Oneawa Drainage Canal, which normally drains the 11.2 square mile basin, was overwhelmed by the excessive volume of floodwaters and could not function as intended.



View of Kawainui Marsh with Kailua town in farground

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Hawaii County

Flooding Source:

Unnamed Zone A - from approximately 1000 feet downstream to approximately 80 feet downstream of Wilder Road

Flooding Source:

Kamuela Stream - from confluence with Waikoloa Stream to Kamamalu Street.

Lanimaumau Stream - from Kamamalu Street to approximately 8,200 feet downstream.



Look what's new!

Digital Flood Insurance Rate Maps for Kauai

Are you planning any work on the island of Kauai? If so, be sure you update your FIRM maps and FIS studies. The new Digital FIRM and associated Flood Insurance Study became effective on September 16, 2005. To view the new maps you can visit <http://store.msc.fema.gov> or the County of Kauai website:

[http://www.kauai.gov/portals/0/pw_eng/design-permitting/flood zone maps/IndexPanel.pdf](http://www.kauai.gov/portals/0/pw_eng/design-permitting/flood%20zone%20maps/IndexPanel.pdf)

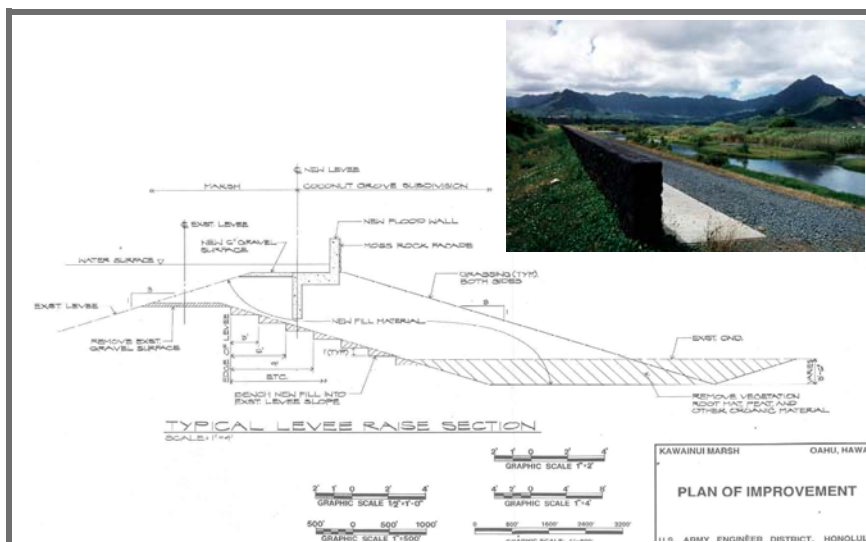
In addition the County of Kauai has revised their flood ordinance. Make sure you familiarize yourself with the new regulations for development within a Special Flood Hazard Area. Call Kauai's Floodplain Manager, Mr. Mario Antonio at (808) 241-6620 for a copy of the amended ordinance.

"Hawaii's own Levee Failure" continued from page 1

As a result, many Coconut Grove residents were forced to evacuate their homes. The American Red Cross sheltered approximately 1100 Oahu residents from January 1– 2, 1988. After the floodwaters subsided, approximately 1250 Oahu homes sustained damage, of which 300 were severely damaged. Only about a tenth of those residents had flood insurance coverage through the National Flood Insurance Program.

According to the post disaster report, by National Research Council, several factors could have contributed to the flooding in Coconut Grove. The report included factors such as the time history of sedimentation and debris flow deposition in the marsh since its original construction in 1966, in-flow retardation due to floating vegetal mat in the marsh, and backwater and tidal effects on the Oneawa drainage channel.

After much controversy over the cause(s) of the flooding, the U.S. Army Corps of Engineers (Corps), completed a detailed project report and Environmental Impact Statement for the Kawainui Marsh Flood Control Project improvements in 1992. The outcome of the report, resulted in the 1997 construction of an improved levee system that raised the existing earthen levee approximately 4 feet and placed a 4 foot high concrete floodwall atop the newly raised structure.



In addition to the levee improvements, a flood warning system was implemented in 2001. The United States Geological Survey (USGS) installed a flood-warning system on the Kawaiinui Marsh, with gauges providing data in real time to the National Weather Service Flood Forecast Office in Honolulu.

As a part of the National Flood Insurance Act of 1968, FEMA developed Flood Insurance Rate Maps (FIRM) to identify the flood hazard risk of a 1 percent chance event. The original mapping process for the City and County of Honolulu began in the mid 70's, with the first effective map debuting in September 1980. A revised map was subsequently issued in

"Hawaii's own Levee Failure" continued on page 3

September of 87, just a few months prior to the New Years Eve Flood.

Investigations into the Coconut Grove subdivision's property damage revealed that the, then current, FEMA Flood Insurance Rate Maps did not accurately reflect the flood hazard potential. Included in the National Research Council's post disaster report, is a table (below) identifying the correlation between flood damage properties and their flood zone designations. Approximately 63% of the homes damaged in Kailua were not in a designated Special Flood Hazard Area.

TABLE 12 Residential Flood Damage by Extent, Area, and Flood Zone

Area	Extent of Damage (%)			Total
	Minor	Major	Destroyed	
Honolulu				
Zone D	39	4	1	44
Hahaione Valley				
Zone A	4	0	0	4
Zone D	24	1	0	25
Subtotal	28	1	0	29
Niu Valley				
Zone A	7	0	0	7
Zone D	74	13	3	90
Subtotal	81	13	3	97
Hawaii Kai				
Zone D	1	0	0	1
Kailua				
Zone A	165	157	1	323
Zone B ^a	273	105	1	379
Zone C ^b	147	13	0	160
Subtotal	585	275	2	862
Waimanalo				
Zone A	8	0	0	8
Zone AH	0	0	1	1
Zone B ^a	11	0	0	11
Zone C ^b	2	2	0	4
Zone D	1	0	0	1
Subtotal	22	2	1	25
Total Structures Damaged (all categories of damage):				1,058

^aZone B corresponds to Zone X (shaded) on FIRMs.

^bZone C corresponds to Zone X (unshaded) on FIRMs.

SOURCE: Information on damage taken from actual damage assessment sheets provided by the Red Cross.

Although the 1997 levee improvements provide a greater factor of safety to Kailua residents, the FIRM maps were not revised to reflect the heightened levee system because the original hydraulic analysis assumed that the levee would not be overtopped. The portions of Coconut Grove that were and still remain in a FEMA designated Special Flood Hazard Area, is the result of localized drainage problems that plague this relatively flat neighborhood. According to the Corps, a restudy would be warranted at the time when these interior drainage issues are addressed.



Sources:

U.S. Army Corps of Engineers,
Department of Land and Natural Resources,
National Research Council
(Study team: John Dracup, Edmond Cheng, Joanne Nigg, and Thomas Schroeder)

HELPING VICTIMS of Hurricane Katrina & Rita

A Guide to Giving Wisely:

The federal government is advising that the best way to provide immediate assistance is to donate money directly to established national relief organizations with the experience and means to deliver aid.

The Federal Trade Commission (FTC), the nation's consumer protection agency, has the following tips to help you give wisely:

- Donate to recognized charities you have given to before. Watch out for charities that have sprung up overnight. They may be well-meaning, but lack the infrastructure to provide assistance. And be wary of charities with names that sound like familiar, or nationally known organizations. Some phony charities use names that sound or look like those of respected, legitimate organizations.
- Give directly to the charity, not the solicitors for the charity. That's because solicitors take a portion of the proceeds to cover their costs, which leaves less for victim assistance.
- Do not give out personal or financial information — including your Social Security number or credit card and bank account numbers — to anyone who solicits a contribution from you. Scam artists use this information to commit fraud against you.
- Check out any charities before you donate. Contact the Better Business Bureau's Wise Giving Alliance at www.give.org.
- Don't give or send cash. For security and tax record purposes, contribute by check or credit card. Write the official name of the charity on your check. You can contribute safely online through national charities like www.redcross.org/donate.

American Red Cross

1-800-HELP-NOW

(1-800-435-7669)



- Ask for identification if you're approached in person. Many states require paid fundraisers to identify themselves as such and to name the charity for which they're soliciting.

Source: Federal Trade Commission (FTC)



Ask the Expert Mortgage Questions

At FEMA's Mitigation Division, Susan Bernstein is not only the Editor of the *Watermark*, she is also FEMA Mitigation Division's Legal Liaison to WYO Companies and the FEMA Office of General Counsel. She and her team at FEMA offer responses to simple to complex questions received through the "Ask the Expert" section of the NFIP website.

The Hawaii Flood Management News would like to share with you these Q&A's, as you may have similar questions:

Question: My mortgage loan is only for 30 percent of the cost of my home, but my lender requires me to have flood insurance for the entire amount. Can she do that?

Answer: Yes, she can. The amount of flood insurance coverage required by the Flood Disaster Protection Act of 1973, as amended by the National Flood Insurance Reform Act of 1994, is the lesser of the following:

1. The maximum amount of NFIP coverage available;
2. The outstanding principal balance of the loan; or
3. The value of the property minus the land.

Thus, the law establishes a "minimum", not "maximum", on how much insurance a lender may require. In the hazard clause of your loan document, your lender may have reserved the right to compel the purchase of insurance above the amount required by law.

FEMA encourages lenders to follow the same general business practices in calculating the flood insurance coverage amount on a building as they do in placing other hazard coverage. The terms and conditions of the hazard clause contained in the loan document fully describe the rights and responsibilities of the parties.

The NFIP encourages property owners to insure their buildings to full replacement value, or at least to 80 percent of the replacement cost, as they do when purchasing homeowners insurance. That way, at the time of loss, single family building that are primary residences and insured to 80 percent or more of their replacement cost value would be settled on a replacement cost basis. Buildings insured to less than 80 percent of replacement cost value would be settled on the basis of actual cash value, which deducts for depreciation.

It would appear that your lender is taking the more prudent approach by requiring insurance representing at least 80 percent of the replacement cost value, rather than the loan balance. This approach benefits both the borrower and the lender because it protects the borrower's financial interest - not just the lender's, as when only the loan balance is insured.

Source: FEMA

Post-Disaster Reconstruction Enforcement of Floodplain Management Regulations

"This is our Indian Ocean Tsunami"...

"It's like 9-11 all over again"....

"How will we ever rebuild and be normal again?"

These are just some of the many comments and questions made in response to the trail of destruction left by Hurricane Katrina and Hurricane Rita. To answer the question, *"How will we ever rebuild and be normal again?"* could be difficult. However, we are a resilient Nation and we will rise to the occasion. In our pursuit, we must evaluate the lessons learned so that when we do rebuild, we rebuild "smarter". FEMA understand the urgency to expedite the repair and reconstruction of flood damaged homes and businesses in the wake of a disaster, however communities cannot overlook the necessity to rebuild responsibly and in a manner that reduces future damages.

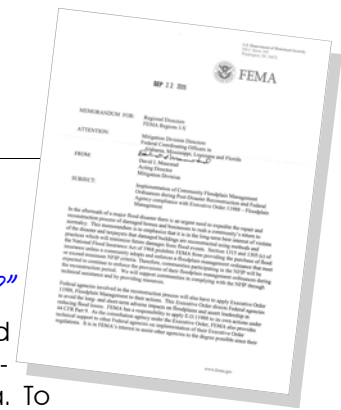
In a memorandum issued by FEMA's Mitigation Division on September 22, 2005, Acting Director David Maurstad, sent a clear message to NFIP communities who rebuild in the aftermath of a major flood disaster. This message "is to emphasize that it is in the long-term best interest of victims of the disaster and taxpayers that damaged buildings are reconstructed using methods and practices which will minimize future damages from flood events. Section 1315 and 1305 (c) of the National Flood Insurance Act of 1968 prohibits FEMA from providing the purchase of flood insurance unless a community adopts and enforces a floodplain management ordinance that meet or exceed minimum NFIP criteria. Therefore, communities participating in the NFIP will be expected to continue to enforce the provisions of their floodplain management ordinances during the reconstruction period." FEMA will support these communities in complying with the NFIP regulations through technical assistance and by providing the necessary resources.

The memorandum also addresses Federal involvement in the reconstruction process. Federal agencies "will also have to apply Executive Order 11988, Floodplain Management to their actions. This Executive Order directs Federal agencies to avoid the long- and short- term adverse impacts on floodplains and assert leadership in reducing flood losses. FEMA has a responsibility to apply E.O. 11988 to its own actions under 44CFR Part 9. As the consultation agency under the Executive Order, FEMA also provides technical support to other Federal agencies on implementation of their Executive Order regulations. It is in FEMA's interest to assist other agencies to the degree possible since their actions at a minimum should be consistent with the minimum requirements being enforced by NFIP communities. An important part of this effort will be applying the Executive Order to critical actions. A critical action is defined as those for which even a slight chance of flooding would be too great, such as the rebuilding of hospitals, nursing homes, and hazardous waste facilities". FEMA is committed to supporting all Federal agencies in the compliance of these regulations in an effort to protect properties from future flood damages.

"Through the implementation of local floodplain ordinances alone, it is estimated that \$1.1 billion in flood damages are prevented annually and structures built to NFIP criteria experience 80% less damage through reduced flood frequency and severity of losses".



Source: ASFPM and FEMA

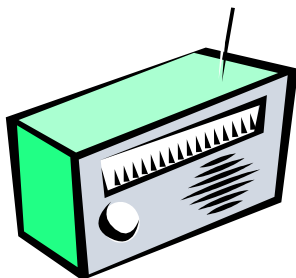


Where do I go??

Hawaii Evacuation Shelters

Do you know where the closest evacuation shelter is located nearest you?

Each County's Civil Defense Agency has pre-identified public disaster shelter sites throughout each island. These sites will open selectively depending on the impending hazard's condition and severity. You should familiarize yourselves, as well as your family members, on these possible evacuation centers. During emergencies, it is important to stay tuned to the radio or television for shelter information and scheduled openings.



The National Oceanic & Atmospheric Administration (NOAA) Weather Radio broadcasts National Weather Service warnings, watches, forecasts and other hazard information 24 hours a day. The radio program broadcasts on frequencies 162.550 and 162.400 in the Hawaiian Islands. Weather radios can be purchased at local electronics stores, mail order catalogs and various other locations. Station KBA99 serves Kauai, Oahu, Molokai, Maui, Lanai, and parts of the Big Island on 162.550 MHz and 162.400 MHz. Station

WWG27 serves parts of the Big Island on 162.550 MHz. NOAA weather radio requires a VHF radio that has the capability of receiving weather frequencies.

For shelter information, please call the appropriate Civil Defense Agency:

City and County of Honolulu

For a current list of Oahu shelter locations, call Oahu Civil Defense Agency at 523-4121 or view an on-line list at:

<http://www.honolulu.gov/ocda/shelter.htm>

Hawaii County

For a current list of Hawaii County shelter locations, call Hawaii Civil Defense Agency at (808) 935-0031, (808) 935-3311 (after hours) or view an on-line list at:

<http://www.co.hawaii.hi.us/cd/HurricaneShelterList.pdf>

Kauai County

For a current list of Kauai County shelter locations, call Kauai Civil Defense Agency at (808) 241-1800 or visit and browse Emergency Preparedness at:

<http://www.kauai.gov/Default.aspx?tabid=77>

Maui County

For a current list of Maui County shelter locations, call Maui Civil Defense Agency at (808) 270-7285 or view an on-line list at:

<http://www.co.maui.hi.us/departments/CivilDefense/shelters.pdf>

Source: County Civil Defense Agencies

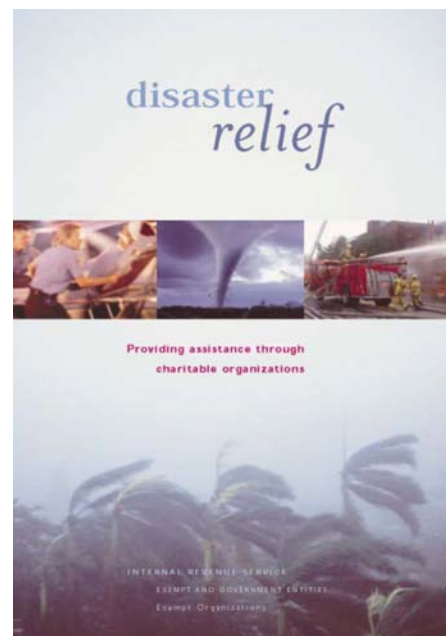


Spotlight

Spotlight, features informative publications which are available to the public free of charge. This quarter's selection is:

Disaster Relief

Providing Assistance through
Charitable Organizations



For charities and individuals wanting to help those affected by a disaster such as Hurricane Katrina and Rita, the Internal Revenue Service (IRS) offers Publication 3833, *Disaster Relief - Providing Assistance Through Charitable Organizations* which contains a wealth of informative and important information about charitable contributions.

To view or download a copy of this publication go to:

<http://www.irs.gov/pub/irs-pdf/p3833.pdf>

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Coastal Zones and the NFIP Workshop



The Federal Emergency Management Agency (FEMA), the U.S. Army Corps of Engineers, and the Department of Land and Natural Resources (DLNR) co-hosted a one-day workshop entitled "Coastal Zones and the NFIP" on Oahu, Kauai, Maui, and

the Big Island on August 24th - 30th. Workshop presenters included FEMA Region IX Hazard Mitigation Specialists, Mr. Henry Chau and Mr. Eric Simmons, U.S. Army Corps of Engi-

neers, Project Engineer Mr. Steve Yamamoto, and the State's NFIP Coordinator, Ms. Carol Tyau-Beam (DLNR).

The author of the "Hawaii Coastal Hazard Mitigation Guidebook", Mr. Dennis Hwang was among the guest speakers.

He provided workshop attendees with a very informative lecture on the importance of planning and siting of coastal projects to reduce risks from natural hazards.

The "Coastal Zones and the NFIP" drew a wide audience from both the private and public sectors with positive results.



Hawaii has been fortunate in receiving valuable training with regards to the National Flood Insurance Program. With continued FEMA support, similar workshops will be making its way back to the Isles.